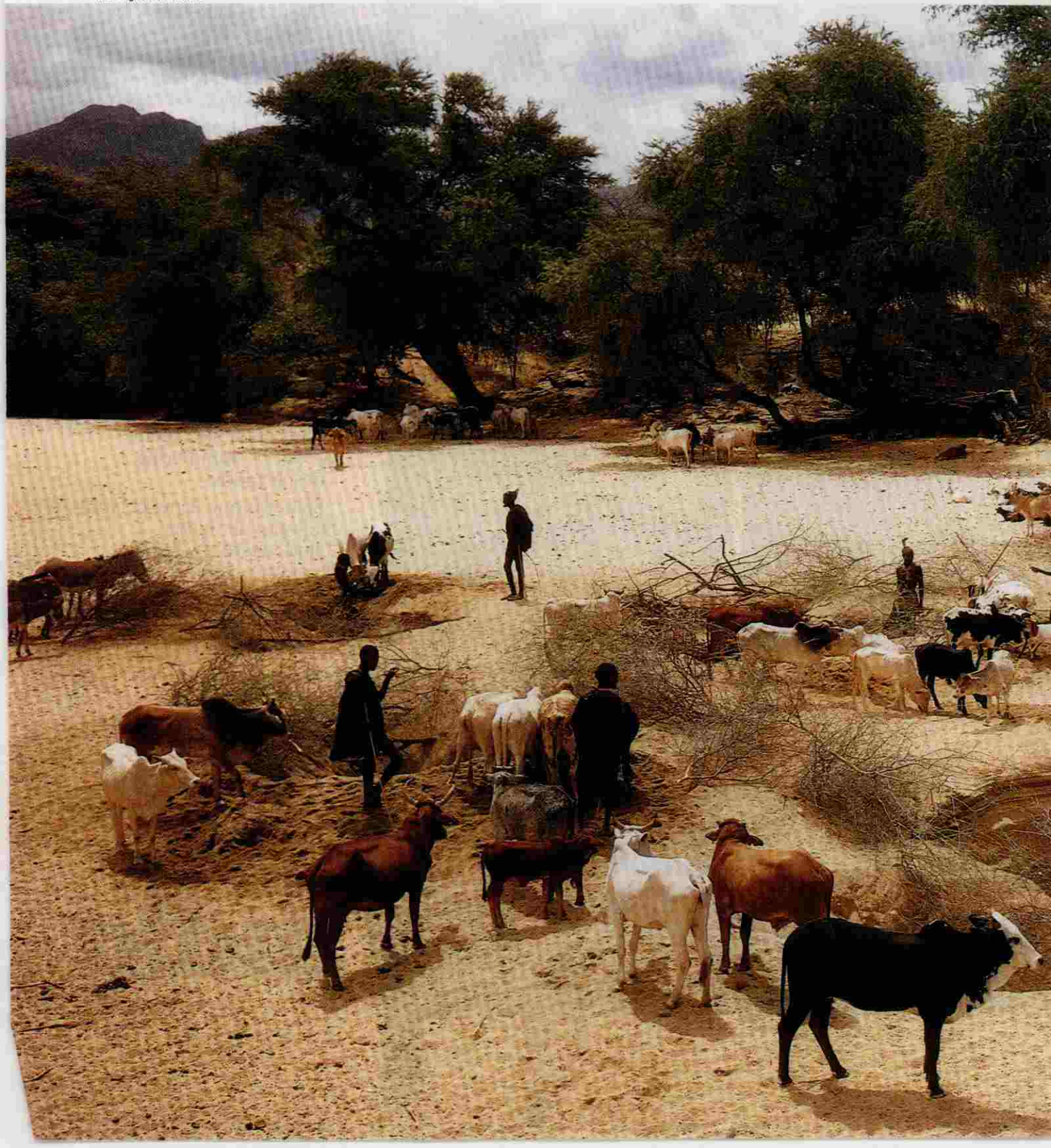
*Turkana nomads and their herds of zebu cows, goats, and sheep gather at a watering hole early in the dry season. Such holes are dug by hand in dry riverbeds. Now shallow, the holes may be up to forty feet deep later in the dry season. The dry branches around the holes keep the animals from falling in. In the background, acacia trees grow out of lava outcroppings.*

Victor Englebert; Black Star



# Beating the Odds in Arid Africa

*When drought brought thousands of East Africans to famine camps, the Ngisonyoka held their ground, their herds, their traditions—and survived*

by J. Terrence McCabe and James E. Ellis

Around the brackish waters of Kenya's Lake Turkana, in the Great Rift Valley of East Africa, fossil beds holding evidence of the earliest humans emerge from a desert of sandy wastelands and volcanic rubble. This one-time cradle of humanity is now a harsh and inhospitable environment where drought and famine are all too common. But the pastoralists who live there, raising livestock and tending herds, still successfully lead the nomadic life that has been followed there for thousands of years. And they continue to survive despite concerns that the days of the nomad are numbered.

In the late 1960s, scientists concluded that the large wandering herds of cattle grazing precious grasslands were inherently destructive of the arid environment. So, during the 1970s, administrators from local governments and international relief organizations promoted irrigation agriculture and fish culture as alternatives to pastoralism. But the alternatives failed. After the severe drought of 1979–1981, and another in 1984, many development efforts were scrapped in favor of famine relief. In the early 1980s, almost 80,000 Turkana pastoralists, nearly one-third of the population, occupied famine camps from the shores of Lake Turkana to the border of Uganda supported by the Kenyan government and foreign donors.

With massive relief efforts under way in the northern and central Turkana districts, we, along with a group of colleagues, began investigating the Turkana pastoralists to the south. There, the Ngisonyoka Turkana seemed to be going about their business as usual and surviving despite the devastating drought. While they suffered temporary hunger and losses among their livestock, for the Ngisonyoka there was no famine, no environmental degradation, and no need for outside relief. We set out to find out why.

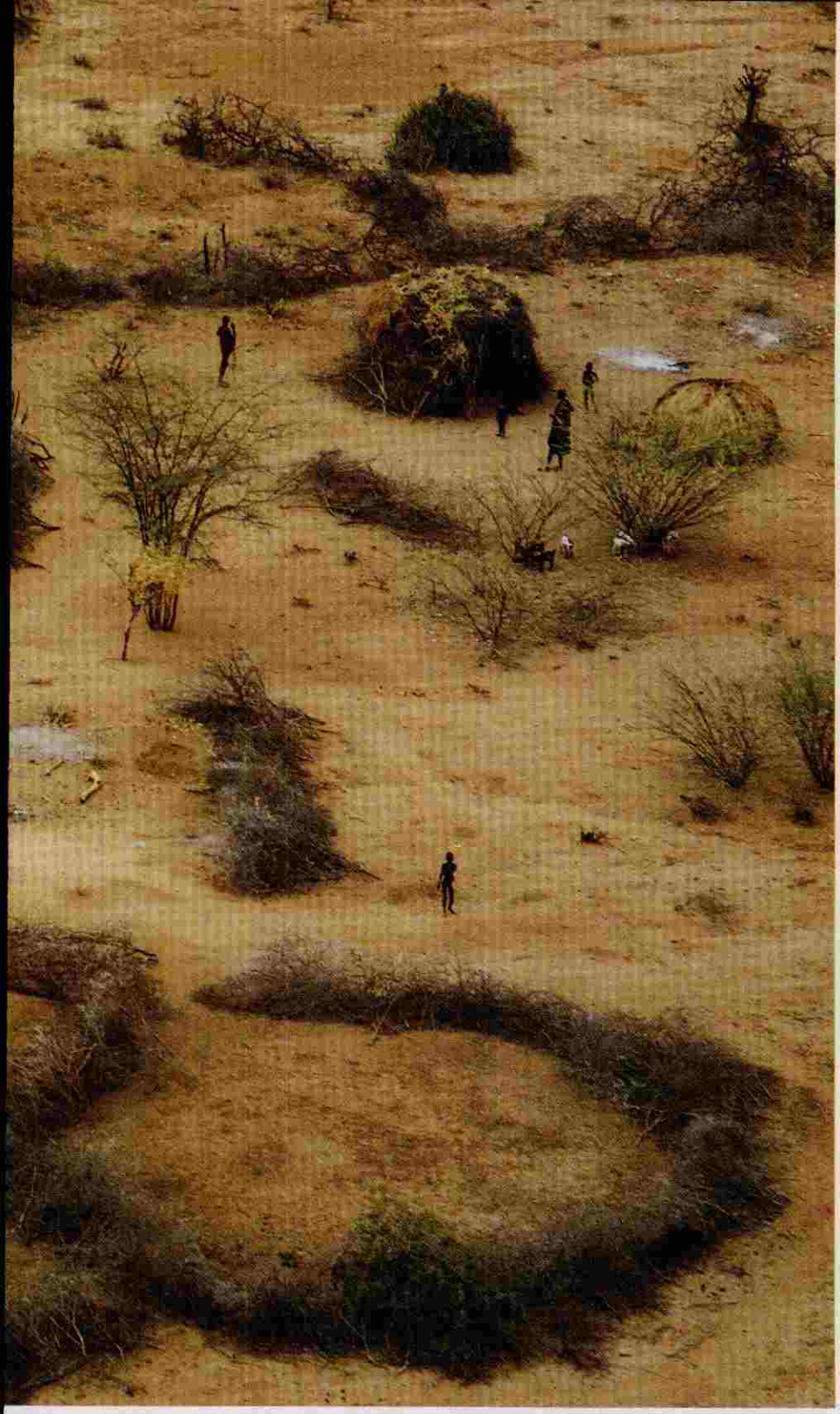
We began our journey by donkey into the vast region west of Lake Turkana. It was the territory of a people who studiously avoided contact with outsiders, and it took us several months to gain the trust of the few families with whom we eventually traveled.

The Turkana migrated from the south-

ern Sudan into northern Kenya in the mid-eighteenth century. Today, some 200,000 Turkana live in this region. Occasionally warlike and without any clear system of chiefs or officials, the Turkana are divided into nineteen tribal sections, each with its own grazing area.

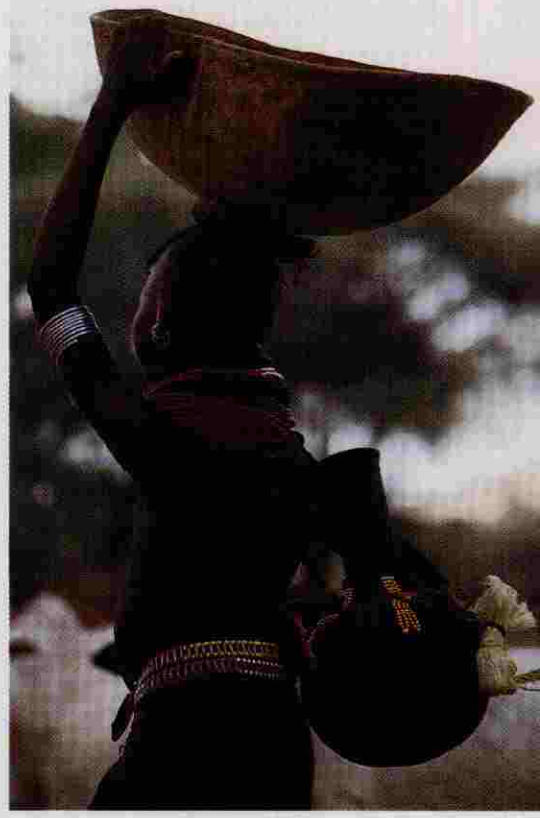
The Ngisonyoka tribal section, consisting of some 9,600 people, 85,000 sheep and goats, 9,800 cattle, and 5,300 donkeys, occupies 5,500 square miles of land. Within this area families move frequently, seven to fifteen times a year depending on the availability of forage, water, the size of their individual herds, and the degree of hostility among the various tribes. And although each move may cover only five to eight miles, knowing when to move is the key to the self-reliance and survival of the Ngisonyoka.

Through the annual cycle of brief rains followed by a long dry season, the Ngisonyoka and their livestock travel from the low-lying plains of the Rift Valley into the bare lava hills and grass-covered mountains. Along the way, their herds graze on both perennial and annual grasslands, dwarf shrub lands, dense bushlands, savannalike grasslands, and true woodlands near the beds of the many



*At family encampments called* awis, *cut acacias are used to corral livestock. The small hut in the foreground is for sleeping and is made by lashing skins to bent branches; the larger hut behind it is for daytime sitting. The young girl, below, bears water on her head in a wooden trough called an* atheger. *Strapped to her arm, a leather jug, or* akarum, *holds water for herders.*

Photographs by Victor Englebert



ephemeral streams. While near Lake Turkana there is only moonlike volcanic rubble and dunes covered with desert shrubs, doum palms, and acacia trees, the Ngisonyoka's plains are grasslands, with often dense bush and wooded stream beds.

Far to the west the rift escarpment rises steeply and spectacularly, up to 10,000 feet above the valley floor. Between these mountains and the plains are 6,000-foot hills that are crucial to the Ngisonyoka pastoralists. There is more rain and more vegetation. Runoff from seasonal mountain storms feeds the intermittent sand rivers that stripe the sandy plains of the valley floor. Acacia woodlands line these rivers and spread into dry, dwarf shrub grasslands. By knowing when and where to satisfy the forage needs of their herds, then utilizing the livestock to provide milk, meat, and blood for their own needs, the Ngisonyoka continually manage a complex food web. By making the most of the vegetation of one region but moving on before it's overgrazed, the Ngisonyoka also manage a fragile environment.

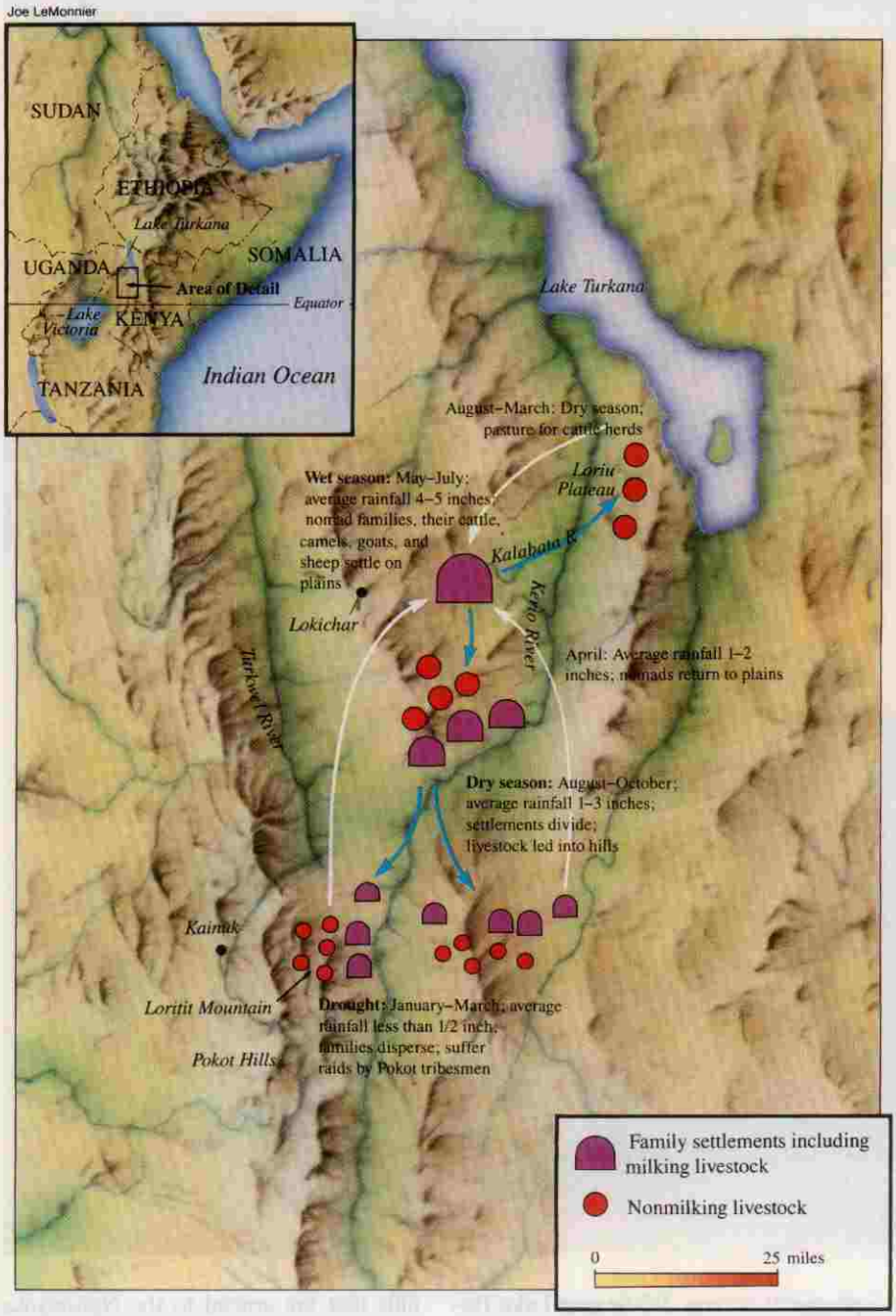
Wet seasons are the good times for the Turkana. Soon after the vegetation responds to the rains, Ngisonyoka herd owners, together with their wives, children, dependent relatives, and livestock, converge on their home area in an encampment known as an *awi*. The herders return from distant grazing lands with their camels, goats, sheep, and short-horned zebu cows. Soon the plains are dotted with homesteads, hundreds of huts made of skins lashed to acacia branches. Food is abundant and enemies are far away.

Most nights the silence is broken by the calls of young men summoning their neighbors to communal dances that often last until daybreak. Songs are sung without accompaniment and recount the

Victor Englebert

*From the major wet season encampment (largest hut in map below), Ngisonyoka nomads disperse ever more widely as rains cease and grasses wither. First, zebu cattle that no longer provide milk are herded north to higher plains for grazing. This preserves forage for milking herds, but as the dry season intensifies, families are forced to travel south in ever smaller groups. Animals giving milk remain with the family, those no longer with milk are taken to the hills where occasional rains still provide water and vegetation. Here, however, herders risk raids from rival tribes. The dry season wells, right, are deep and mostly worked by women.*

Joe LeMonnier




strength and beauty of a favorite ox, the defeat of enemies, the ability of nature to provide the necessities of life—in short, the joys of a pastoral existence. Young men and women share in the excitement of being reunited with friends and lovers. Luckily, labor requirements for both sexes are minimal during this time, and tired dancers return to their own *awi* before dawn to sleep for a few hours before the next work day begins.

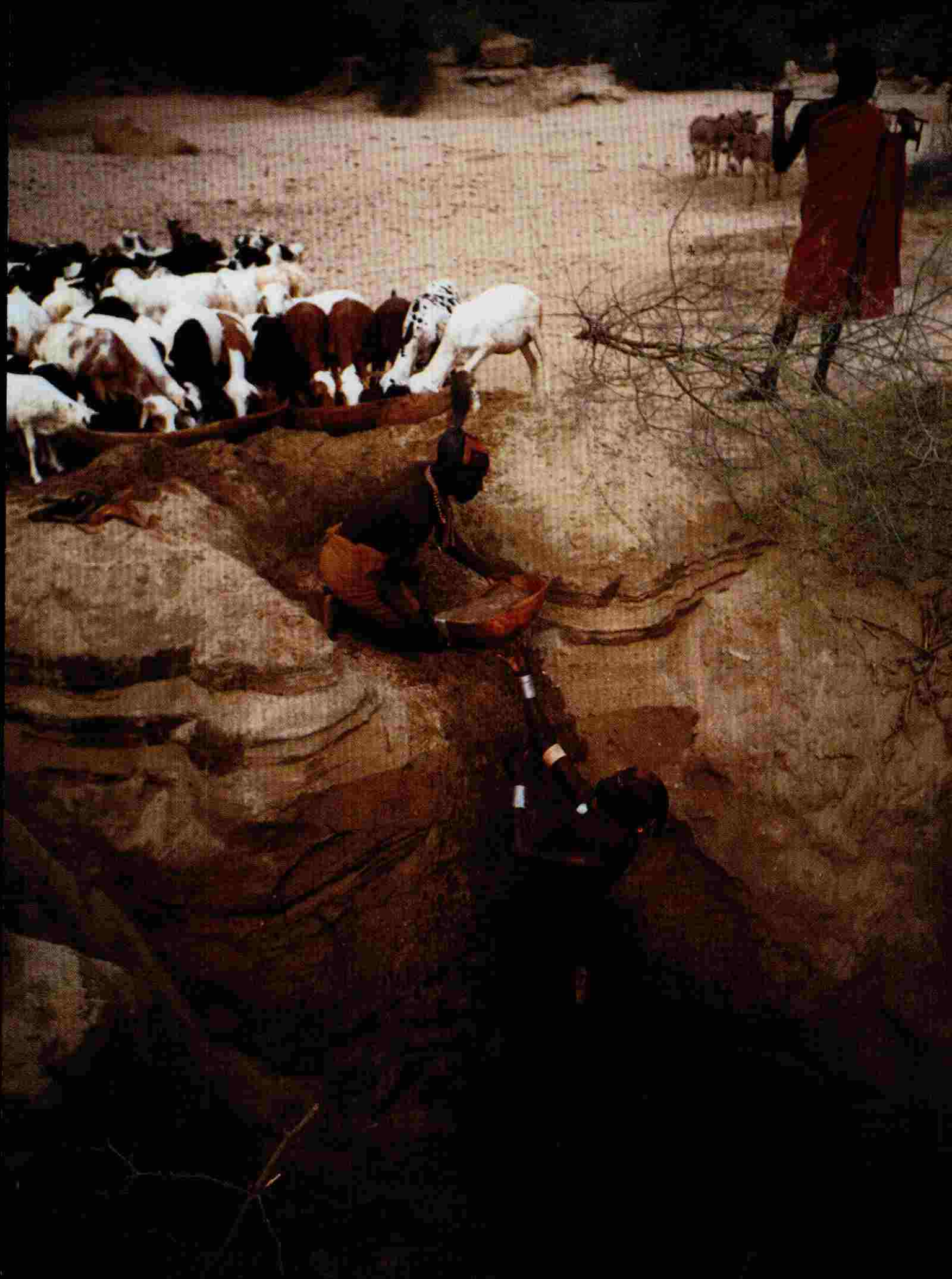
Women visit relatives, make clothes, relax, and in general, revel in the few months of relative ease and safety. Children exhibit a level of energy not seen at other times of the year and often play "hyena and cow" until late into the night.

Most social functions, such as weddings, also occur in the wet season. When herds are healthy, Turkana ceremonies are accompanied by the slaughtering of animals and the eating of meat. All Turkana love to eat meat and will gorge themselves when the opportunity arises. During a large wedding that we recently attended, three camels, three oxen, and ten or more goats and sheep were slaughtered. Hundreds of animals were transferred from the groom's family to the bride's, and more than a hundred and fifty people joined in the singing, dancing, and feasting.

Herd owners, if they have sons or other young men to tend their herds, spend most days sitting under the "tree of the men" (usually the one that provides the most shade), recounting events of the past dry season and discussing the prospects for the upcoming year. Talk centers on pasture conditions, livestock health, herd growth, the timing and location of future moves, and enemy raids. Old relationships are reaffirmed and new ones struck up, each involving some exchange of livestock that may later prove critical to a family's survival. Through this network, a herd owner obtains animals in times of need. Turkana rarely talk about the impending dry season. The rains are too unpredictable. Instead, they talk strategy. For when the rains cease in June or July and the lush grasses the cattle have been feeding on wither and die, the Turkana must move.

Plants are the basis of the pastoral system. Altogether, more than sixty different plants make up significant portions of livestock diets. The energy from these plants translates into livestock milk, meat, and blood, which together make up more than three-quarters of the Ngisonyoka diet. Anthropologist Kathleen Galvin found that during good years and rainy seasons cattle milk may provide 15 to 20 percent of human food energy. But during the dry season, the grasses are among the first resources to disappear and the cattle can only produce enough milk for their calves.

Then the diversity of plants and livestock and the flexibility of the pastoral enterprise become important. Cattle and the young men who herd them leave the *awi* and retreat to mountain and hill pas-



*When the dry season is at its height, nomads depend upon animal blood mixed with milk or grain for much of their nutrition. Bleeding, below, is done by first tying a leather thong around the animal's neck, then putting a small hole in a vein and removing a pint or more of blood. When the thong is released and dung put over the hole, the bleeding stops. An animal will not be bled more than once every couple of months. A Turkana woman milks a zebu cow, right.*

Photographs by J. Terrence McCabe

tures. There, perennial grasses will sustain the cattle, though not in a productive state, throughout the long dry season. Herds of goats and camels remain with the family household longer. Goats will eat a variety of plants, and camels feed on the woody shrubs and trees that thrive into the dry season on water stored deep in the sandy soils of the plains. Camels continue to give milk. Galvin found that camels provide 56 percent of the total milk consumed by the Ngisonyoka, or about one-third of all their food energy, year-round.

Eventually, while there will be enough water for the people, there will not be enough for the livestock. The water stored during the wet season dries up. Wells dug by hand into the beds of sand rivers are often forty feet deep before they prove dry or unsafe and are abandoned. Then the people and animals leave the plains. Many nomads head for the dry-season springs of the lava hills, but forage is scarce on these burned and rocky moonscapes. Others migrate to the more mesic savannas and bushlands to the south but risk raids there by rival Pokot tribesmen.

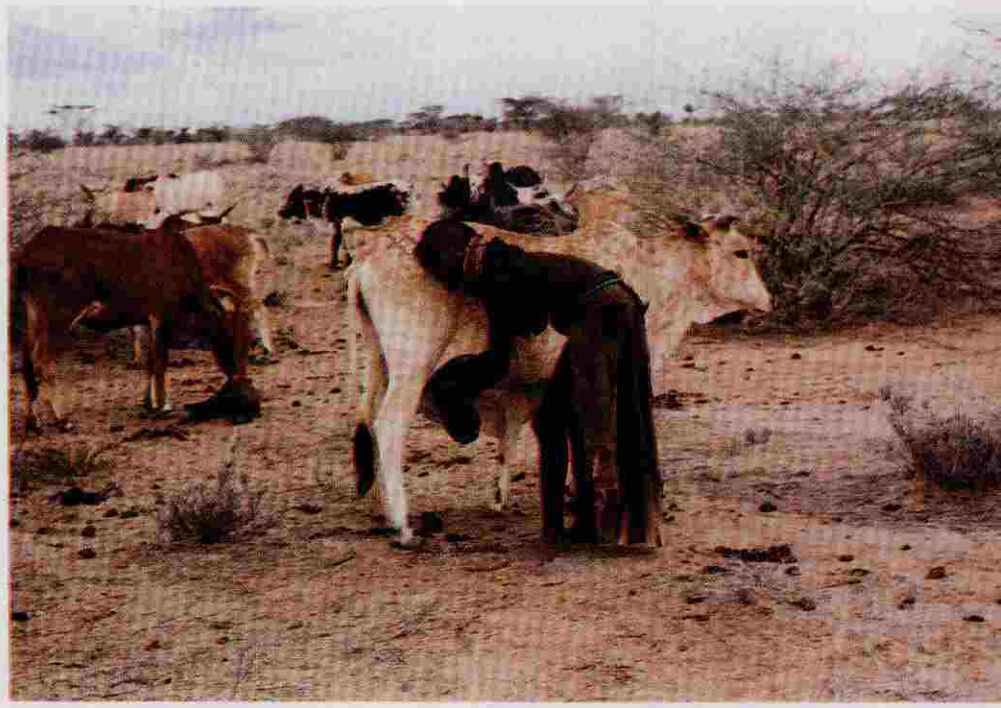
Camel milk and livestock blood are the dry-season mainstays of the Ngisonyoka diet. A pint or more of blood may be drawn from a camel (less from a goat) and either drunk plain, mixed with milk, or cooked with grain or the grated husk of the palm fruit. Meals may be milk alone or, on occasion, supplemented by wild fruits, goat meat, and bartered or purchased grain. Although grain makes up 10 to 15 percent of food energy annually, it is particularly important during dry periods, when livestock production is lowest.

As food resources dwindle, poorer families travel with wealthier relatives. The size of herds is the measure of wealth among the Ngisonyoka, but since it is not socially acceptable for a wealthy man to deny food to poorer relatives, a man with 100 camels, 500 cattle, and 1,000 goats and sheep may not live much better than a poorer herder since he'll be supporting many more dependents. The extra herds only put more distance between himself and poverty. Herd owners who are down on their luck, without herds or enough workers to attend to them, may strike up deals with relatives or friends. A loan of a milking animal or someone to help with the herds will be repaid to the lender when he himself is in need.

Movement becomes more frequent as the dry season intensifies. Now the goats and camels that are unable to produce milk must be separated from the milking herds and taken to grazing lands often three to six miles from where the rest of the family makes their camp. Water from springs or wells may be even farther away. With herders gone and the grazing land patchy, families become smaller and more isolated. If food is limited, female relatives and their children may be forced to seek food in towns in exchange for work brewing local beer or doing small tasks for the missions or Somali traders. Families try to stay together; herd owners are apprehensive about moving alone because isolated homesteads are far more vulnerable to attack. They move in groups of two to five households, sharing food and herding responsibilities: but the associations, of friends or relatives, are fragile.

People often complain of being lonely and solicit news of friends and relatives whenever they meet someone who is traveling. Under the tree of the men they still avoid speaking of the drought or when it will break. Although the advice of soothsayers may be sought, there is little reliance placed on the supernatural. Most of the talk is about the location of forage and the possibility of enemy raids.

Intertribal raiding has been a feature of pastoral life for thousands of years. The



principal enemy for the Ngisonyoka is the Pokot, a tribe of pastoral nomads who live to the south and west of the Ngisonyoka's main dry-season pastures. Although there have been occasional periods of peace between the two tribes when livestock and other goods were exchanged, peace has always been short-lived.

Herd owners try to avoid those places where attacks are most likely to occur. During good dry seasons, Ngisonyoka herders disperse to the northeast lava hills where there is little threat of raiding. In drought years, however, the hills south and west of Ngisonyoka territory may be the only area where livestock forage can be found. In November 1980, two members of our research team witnessed a Pokot raid on an *awi*. Two children were killed and about 350 goats and sheep were stolen. The family was grief stricken, and the people got little sleep over the next nights, worrying about the possibility of another attack, while the lambs and kids bleated, calling for their lost mothers. Tensions remained high for weeks as rumors circulated wildly among those families pushing south toward the Pokot border. The Ngisonyoka were glad when at last scouts reported that rains had begun in the north and they could begin their return to the open plains.

The Ngisonyoka live a difficult and frequently dangerous existence, but their traditional pastoralism maintains a large population in a severe and unpredictable environment. By tapping a multiplicity of resources in a variety of ways and by sharing the effects of drought stress among families, they have managed to survive severe droughts without assistance. Damage to the environment from large numbers of livestock has not occurred. We estimate Ngisonyoka livestock consume only 7 to 9 percent of the region's annual vegetation production. Their herds of livestock are no greater than the number of native animals grazing African regions with similar rainfall. Overgrazing has not occurred and drought has not brought mass livestock starvation.

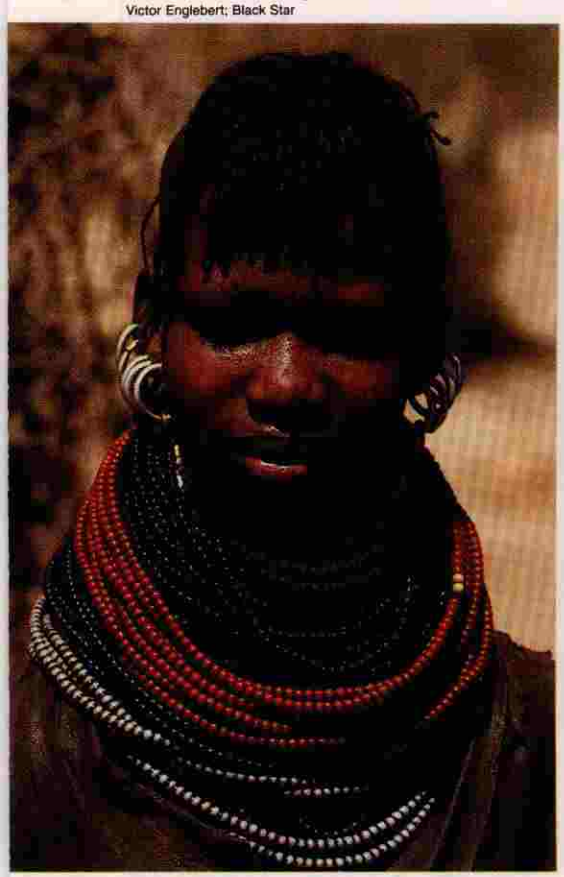
The Ngisonyoka have worked out a strategy: they depend most on the most reliable resources in their environment—woody plants and camel milk; they exploit the most productive but ephemeral resources—grasses and cattle milk—when possible; when times are hard, they make use of their precious livestock—drinking its blood, slaughtering it for meat, or trading it for grain. These are never arbitrary decisions. For example, goats are most often slaughtered and traded because goat herds recover most rapidly.

The Ngisonyoka may also be successful because their system has not been disrupted by well-meaning but inappropriate development activities. In some parts of Africa, pastoralists were encouraged to settle and engage in agriculture or to produce beef for markets. These changes might be appropriate in regions of adequate rainfall where there is an established market system, but in places like the Turkana they enhance productivity and living standards in good years while increasing the possibility of famine and

Victor Englebert; Black Star

*Turkana women often wear fifteen pounds of glass beads. These do not stretch their necks but leave indentations in their shoulders. Once a woman has wed, she gives her beads to a younger sister, and her husband presents her with new ones. Men play-fight, right, using buffalo-hide shields and sticks cut from acacia trees. In battles with other tribes, nomads depend on rifles.*

Victor Englebert; Black Star



destitution during droughts. Irrigation often costs more than the value of what is produced. Raising cattle for market means reducing the size of the herd to increase the size of individual animals. When drought occurs the reduced herd size leaves herders with nothing to fall back on.

In the harsh environment of the Rift Valley, pastoralism has supported humanity for a long time. It would be a serious mistake to assume that such a time-tested strategy can easily be replaced by practices developed in another time and another place. Herds are more than a commodity to the Ngisonyoka. One down-on-his-luck herder told us he was distressed by the possibility that he might have to go to an agricultural settlement where the cost of a bride is paid in sweet potatoes and gourds instead of camels, goats, cattle, and sheep. For the Ngisonyoka, the good life—all life—begins with camels, goats, cattle, and sheep. □